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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/752,665	01/08/2004	Hirofumi Muratani	247268US2SRD DIV	4467

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
GURSHMAN, GRIGORY	

ART UNIT	PAPER NUMBER
2132	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/752,665	MURATANI, HIROFUMI	
	Examiner	Art Unit	
	Grigory Gurshman	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

AT

DETAILED ACTION

Response to Arguments

1. Applicant's amendment of claims 29-31 reflects the limitation "Hamming distance between the outputted codeword and a second outputted codeword is proportional to a distance between the first watermark information and a second watermark information". This limitation is not supported by the specification thereby presenting a new matter. Applicant's arguments have been considered, but are mute in view of the new grounds of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 29-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not describe *Hamming distance between codewords.*

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aggarwal (US Patent No. 6.834.344 B1) in view of Stern (US Patent No. 5.483.597) and further in view of Kumar (US Patent No. 5.949.796).

5. Referring to claims 29-31, Aggarwal discloses semi-fragile watermarks (see abstract). Aggarwal teaches a method for marking high-quality digital images with a robust and invisible watermark. It requires the mark to survive and remain detectable and authenticatable through all image manipulations that in themselves do not damage the image beyond usability. The watermark has the property that it can detect if the essential contents of the image has changed. The first phase of the method comprises extracting a digest or number N from the image so that N only (or mostly) depends on the essential information content, such that the same number N can be obtained from a scan of a high quality print of the image, from the compressed form of the image, or in general, from the image after minor modifications (introduced inadvertently by processing, noise etc.). The second phase comprises the marking.

6. Referring to the instant claims the limitation " means for embedding the outputted codeword as the watermark information into the content' is met by Fig. 2 (blocks 112

and 113). The digest N is embedded into the image (i.e. content). N is a codeword (see column 9, lines 49-50). The limitation "codeword selected from a plurality of codewords" is met by teaching that N is chosen as the codeword in C nearest to F(I) – see col. ,7 lines 43-45. Aggarwal, however, does not teach selecting the codeword from the simplex code according to the user ID. Aggrawal also does not teach a Hamming distance between codewords being proportional to a distance between the watermarks.

7. Referring to the instant claims, Stern discloses a process for the authentication of at least one identification device by a verification device (see abstract). Stern teaches that the user has several secret codes s[1], ... It is beneficial if these vectors s[1], . . . , s[w] are forced to form an extended simplex code (see column 2, lines 57-60). These teachings read on the limitation "codewords constructing a simplex code" based on "user identification".

8. Referring to the instant claims, Kumar discloses digital broadcasting method and system (see abstract). Kumar teaches embedding codewords into the SCA signal. According to Kumar for each pair of received codeword estimates, the receiver system combines codeword estimates or selects between decoded codewords by determining a metric, which corresponds to the probability of error in each of the decoded codeword estimates (Fig.13). The number of differences in bit positions (i.e. the Hamming distance) between each of the re-encoded estimates and the corresponding received estimate, prior to decoding and re-encoding, is proportional to the bit error rate (BER)

for the codeword prior to decoding (see column 30, line 65 to column 31, lines 1-4 and Fig 16).

9. Therefore at the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the watermark embedding system of Aggarwal by embedding the codeword taken out of the simplex code associated with the user as taught in Stern and have Hamming distance between the codewords proportional to the distance between the watermarks as taught in Kumar. One of ordinary skill in the art would have been motivated to modify the watermark embedding system of Aggarwal by embedding the codeword taken out of the simplex code associated with the user as taught in Stern for verification of the validity of the identification device (see Stern abstract) and have Hamming distance between the codewords proportional to the distance between the watermarks as taught in Kumar for increasing signal-to-noise ratio (see Kumar, column 31, lines 12-14).

10. Referring to claims 30 and 31, the limitation "obtaining a correlation value between each of the outputted codewords and the content" is met by Fig. 6 of Aggarwal (blocks 502 and 503). The limitation "determining presence of watermark information based on norm calculated... and specifying the colluder based on the correlation value if presence of the watermark is determined" is met by Fig. 8 (see blocks 705-707).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 6.005.727 to Behrens et al

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Grigory Gurshman whose telephone number is (571)272-3803. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571)272-3799. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GG.

GG

Grigory Gurshman
Examiner
Art Unit 2132

Gilberto Barron Jr.

GILBERTO BARRÓN JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100